

CLAIM AMENDMENTS

- 1    1.    (Previously Presented) A method of determining a multilayer switching path for a  
2        flow between a source device and a destination device in a switched network, the  
3        method comprising the computer-implemented steps of:  
4        determining a Layer 3 path and a Layer 2 path through the switched network from  
5                the source device to the destination device;  
6        selecting each route processor of the switched network that is in the Layer 3 path  
7                and that appears on the Layer 2 path that is associated with the source  
8                device and the destination device and that leads to and emanates from the  
9                route processor;  
10       selecting, for each selected route processor, a switch in the switched network that  
11                satisfies a pre-determined set of criteria as a relevant switch engine that  
12                multilayer switches the selected route processor;  
13       creating and storing information that defines a multilayer switching path and that  
14                includes information identifying the source device, destination device, and  
15                each selected switch.
- 1    2.    (Previously Presented) A method as recited in Claim 1, wherein selecting the  
2        switch that satisfies the pre-determined set of criteria comprises identifying one or  
3        more switches in the switched network that are configured as switch engines,  
4        associated with the selected route processor, and included in the Layer 2 path  
5        leading to and emanating from the selected route processor.
- 1    3.    (Previously Presented) A method as recited in Claim 2, wherein selecting the  
2        switch that satisfies the pre-determined set of criteria as the relevant switch engine  
3        further comprises selecting from the one or more switches as the relevant switch  
4        engine the switch that contains an MLS-entry that matches the flow between the  
5        source device and the destination device when there is only one switch that  
6        contains the MLS-entry that matches the flow.

- 1 4. (Previously Presented) A method as recited in Claim 3, wherein selecting the  
2 switch that satisfies the pre-determined set of criteria as the relevant switch engine  
3 further comprises selecting from the one or more switches as the relevant switch  
4 engine the switch that contains an MLS-entry that matches the flow between the  
5 source device and the destination device and that is the farthest away on the  
6 Layer 2 path from the selected route processor when there is more than one switch  
7 that contains the MLS-entry that matches the flow.
- 1 5. (Previously Presented) A method as recited in Claim 2, further comprising  
2 establishing the flow between the source device and the destination device when  
3 no flow exists between the source device and destination device during  
4 determination of the multilayer switching path.
- 1 6. (Original) A method as recited in Claim 5, wherein establishing the flow between  
2 the source device and the destination device further comprises sending packets  
3 from the source device to the destination device when the source device is not  
4 remote.
- 1 7. (Previously Presented) A method as recited in Claim 5, wherein establishing the  
2 flow between the source device and the destination device further comprises  
3 sending packets from a network management station when the source device is  
4 remote, wherein the packets that are sent from the network management station  
5 traverse the relevant switch engine for the selected route processor.
- 1 8. (Original) A method as recited in Claim 5, wherein establishing the flow between  
2 the source device and the destination device further comprises sending packets  
3 from any route processor that is upstream from the selected route processor to the  
4 destination device when the source device is remote.

1     9.     (Original) A method as recited in Claim 5, wherein establishing the flow between  
2           the source device and the destination device further comprises sending packets  
3           from any route processor that is upstream from the selected route processor to the  
4           destination device when the source device is remote and when the packets that are  
5           sent from a network management station do not traverse the relevant switch  
6           engine for the selected route processor.

1     10.    (Previously Presented) A computer-readable medium comprising one or more  
2           sequences of instructions for determining a multilayer switching path for a flow  
3           between a source device and a destination device in a switched network, which  
4           instructions, when executed by one or more processors, cause the one or more  
5           processors to carry out the steps of:  
6           determining a Layer 3 path and a Layer 2 path through the switched network from  
7                 the source device to the destination device;  
8           selecting each route processor of the switched network that is in the Layer 3 path  
9                 and that appears on the Layer 2 path that is associated with the source  
10            device and the destination device and that leads to and emanates from the  
11            route processor;  
12           selecting, for each selected route processor, a switch in the switched network that  
13                 satisfies a pre-determined set of criteria as a relevant switch engine that  
14            multilayer switches the selected route processor;  
15           creating and storing information that defines a multilayer switching path and that  
16                 includes information identifying the source device, destination device, and  
17            each selected switch.

- 1 11. (Previously Presented) A computer-readable medium as recited in Claim 10,  
2 wherein selecting the switch that satisfies the pre-determined set of criteria  
3 comprises identifying one or more switches in the switched network that are  
4 configured as switch engines, associated with the selected route processor, and  
5 included in the Layer 2 path leading to and emanating from the selected route  
6 processor.
- 1 12. (Previously Presented) A computer-readable medium as recited in Claim 11,  
2 wherein selecting the switch that satisfies the pre-determined set of criteria as the  
3 relevant switch engine further comprises selecting from the one or more switches  
4 as the relevant switch engine the switch that contains an MLS-entry that matches  
5 the flow between the source device and the destination device when there is only  
6 one switch that contains the MLS-entry that matches the flow.
- 1 13. (Previously Presented) A computer-readable medium as recited in Claim 12,  
2 wherein selecting the switch that satisfies the pre-determined set of criteria as the  
3 relevant switch engine further comprises selecting from the one or more switches  
4 as the relevant switch engine the switch that contains an MLS-entry that matches  
5 the flow between the source device and the destination device and that is the  
6 farthest away on the Layer 2 path from the selected route processor when there is  
7 more than one switch that contains the MLS-entry that matches the flow.
- 1 14. (Previously Presented) A computer-readable medium as recited in Claim 11,  
2 further comprising establishing the flow between the source device and the  
3 destination device when no flow exists between the source device and destination  
4 device during determination of the multilayer switching path.
- 1 15. (Original) A computer-readable medium as recited in Claim 14, wherein  
2 establishing the flow between the source device and the destination device further  
3 comprises sending packets from the source device to the destination device when  
4 the source device is not remote.

- 1 16. (Previously Presented) A computer-readable medium as recited in Claim 14,  
2 wherein establishing the flow between the source device and the destination  
3 device further comprises sending packets from a network management station  
4 when the source device is remote, wherein the packets that are sent from the  
5 network management station traverse the relevant switch engine for the selected  
6 route processor.
- 1 17. (Original) A computer-readable medium as recited in Claim 14, wherein  
2 establishing the flow between the source device and the destination device further  
3 comprises sending packets from any route processor that is upstream from the  
4 selected route processor to the destination device when the source device is  
5 remote.
- 1 18. (Original) A computer-readable medium as recited in Claim 14, wherein  
2 establishing the flow between the source device and the destination device further  
3 comprises sending packets from any route processor that is upstream from the  
4 selected route processor to the destination device when the source device is  
5 remote and when the packets that are sent from a network management station do  
6 not traverse the relevant switch engine for the selected route processor.
- 1 19. (Previously Presented) An apparatus for determining a multilayer switching path  
2 for a flow between a source device and a destination device in a switched  
3 network, the apparatus comprising:  
4 means for determining a Layer 3 path and a Layer 2 path through the switched  
5 network from the source device to the destination device;  
6 means for selecting each route processor of the switched network that is in the  
7 Layer 3 path and that appears on the Layer 2 path that is associated with  
8 the source device and the destination device and that leads to and emanates  
9 from the route processor;

10 means for selecting, for each selected route processor, a switch in the switched  
11 network that satisfies a pre-determined set of criteria as a relevant switch  
12 engine that multilayer switches the selected route processor;  
13 means for creating and storing information that defines a multilayer switching  
14 path and that includes information identifying the source device,  
15 destination device, and each selected switch.

1 20. (Previously Presented) An apparatus for determining a multilayer switching path for a  
2 flow between a source device and a destination device in a switched network, the  
3 apparatus comprising:  
4 a network interface that receives one or more messages from the switched network;  
5 one or more processors coupled to the network interface to receive the messages  
6 therefrom;  
7 a memory accessible to the one or more processors; and  
8 one or more sequences of instructions stored in the memory which, when executed by  
9 the one or more processors, cause the one or more processors to carry out the  
10 steps of:  
11 determining a Layer 3 path and a Layer 2 path through the switched network  
12 from the source device to the destination device;  
13 selecting each route processor of the switched network that is in the Layer 3  
14 path and that appears on the Layer 2 path that is associated with the  
15 source device and the destination device and that leads to and emanates  
16 from the route processor;  
17 selecting, for each selected route processor, a switch in the switched network  
18 that satisfies a pre-determined set of criteria as a relevant switch engine  
19 that multilayer switches the selected route processor;  
20 creating and storing information that defines a multilayer switching path and  
21 that includes information identifying the source device, destination  
22 device, and each selected switch.

1 21. (Currently Amended) An apparatus as recited in Claim 19, wherein the means for  
2 selecting the switch that satisfies the pre-determined set of criteria comprises means  
3 for identifying one or more switches in the switched network that are configured as  
4 switch engines, associated with the selected route processor, and included in the  
5 Layer ~~21~~ 2 path leading to and emanating from the selected route processor.

1 22. (Previously Presented) An apparatus as recited in Claim 21, wherein the means for  
2 selecting the switch that satisfies the pre-determined set of criteria as the relevant  
3 switch engine further comprises means for selecting from the one or more switches as  
4 the relevant switch engine the switch that contains an MLS-entry that matches the flow  
5 between the source device and the destination device when there is only one switch  
6 that contains the MLS-entry that matches the flow.

1 23. (Currently Amended) An apparatus as recited in Claim 22, wherein the means for  
2 selecting the switch that satisfies the pre-determined set of criteria as the relevant  
3 switch engine further comprises means for selecting from the one or more switches as  
4 the relevant switch engine the switch that contains an MLS-entry that matches the flow  
5 between the source device and the destination device and that is the farthest away on  
6 the Layer ~~21~~ 2 path from the selected route processor when there is more than one  
7 switch that contains the MLS-entry that matches the flow.

1 24. (Previously Presented) An apparatus as recited in Claim 21, further comprising means  
2 for establishing the flow between the source device and the destination device when no  
3 flow exists between the source device and destination device during determination of  
4 the multilayer switching path.

1 25. (Previously Presented) An apparatus as recited in Claim 24, wherein the means for  
2 establishing the flow between the source device and the destination device further  
3 comprises means for sending packets from the source device to the destination device  
4 when the source device is not remote.

1 26. (Previously Presented) An apparatus as recited in Claim 24, wherein the means for  
2 establishing the flow between the source device and the destination device further  
3 comprises means for sending packets from a network management station when the  
4 source device is remote, wherein the packets that are sent from the network  
5 management station traverse the relevant switch engine for the selected route  
6 processor.

1 27. (Previously Presented) An apparatus as recited in Claim 24, wherein the means for  
2 establishing the flow between the source device and the destination device further  
3 comprises means for sending packets from any route processor that is upstream from  
4 the selected route processor to the destination device when the source device is  
5 remote.

1 28. (Previously Presented) An apparatus as recited in Claim 24, wherein the means for  
2 establishing the flow between the source device and the destination device further  
3 comprises means for sending packets from any route processor that is upstream from  
4 the selected route processor to the destination device when the source device is remote  
5 and when the packets that are sent from a network management station do not traverse  
6 the relevant switch engine for the selected route processor.

1 29. (Currently Amended) An apparatus as recited in Claim 20, wherein selecting the  
2 switch that satisfies the pre-determined set of criteria comprises identifying one or  
3 more switches in the switched network that are configured as switch engines,  
4 associated with the selected route processor, and included in the Layer ~~29~~ 2 path  
5 leading to and emanating from the selected route processor.



1 30. (Previously Presented) An apparatus as recited in Claim 29, wherein selecting the  
2 switch that satisfies the pre-determined set of criteria as the relevant switch engine  
3 further comprises selecting from the one or more switches as the relevant switch  
4 engine the switch that contains an MLS-entry that matches the flow between the  
5 source device and the destination device when there is only one switch that contains  
6 the MLS-entry that matches the flow.

1 31. (Currently Amended) An apparatus as recited in Claim 30, wherein selecting the  
2 switch that satisfies the pre-determined set of criteria as the relevant switch engine  
3 further comprises selecting from the one or more switches as the relevant switch  
4 engine the switch that contains an MLS-entry that matches the flow between the  
5 source device and the destination device and that is the farthest away on the Layer ~~29~~ 2  
6 path from the selected route processor when there is more than one switch that  
7 contains the MLS-entry that matches the flow.

1 32. (Previously Presented) An apparatus as recited in Claim 29, further comprising  
2 establishing the flow between the source device and the destination device when no  
3 flow exists between the source device and destination device during determination of  
4 the multilayer switching path.

1 33. (Previously Presented) An apparatus as recited in Claim 32, wherein establishing the  
2 flow between the source device and the destination device further comprises sending  
3 packets from the source device to the destination device when the source device is not  
4 remote.

1 34. (Previously Presented) An apparatus as recited in Claim 32, wherein establishing the  
2 flow between the source device and the destination device further comprises sending  
3 packets from a network management station when the source device is remote,  
4 wherein the packets that are sent from the network management station traverse the  
5 relevant switch engine for the selected route processor.

1 35. (Previously Presented) An apparatus as recited in Claim 32, wherein establishing the  
2 flow between the source device and the destination device further comprises sending  
3 packets from any route processor that is upstream from the selected route processor to  
4 the destination device when the source device is remote.

1 36. (Previously Presented) An apparatus as recited in Claim 32, wherein establishing the  
2 flow between the source device and the destination device further comprises sending  
3 packets from any route processor that is upstream from the selected route processor to  
4 the destination device when the source device is remote and when the packets that are  
5 sent from a network management station do not traverse the relevant switch engine for  
6 the selected route processor.